

Work Order ID 154282***154282***

Page 1

Wednesday, December 07, 2016 1:50:14 PM

Item ID: 644.4113

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Spacer, Stop

Start Date: 12/9/2016 Start Qty: 14.00

14

Cust Item ID:

Required Date: 12/23/2016 Req'd Qty: 14.00

14

Customer:

Reference:

Approvals:

Process Plan:

DAS
21
9-89

Date: DEC 07 2016

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

644.4100

F2

110

0.00

110

HAAS CNC VERTICAL MACHINING #1

Lathe Conv

Memo

0.29

Conventional Lathe

1-TURN AS PER DWG

DWG REV: F

2- deburr and break all sharp edges

120

0.00

120

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.19

Quality Control

DAS
32
9-89

16-12-12

DAS
32
9-89

16-12-12

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 154282

Wednesday, December 07, 2016 1:50:14 PM

154282

Page 2

Item ID: 644.4113

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Spacer. Stop

Start Date: 12/9/2016 Start Qty: 14.00

14

Cust Item ID:

Required Date: 12/23/2016 Req'd Qty: 14.00

14

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.05

Quality Control

14

2/16-12-13

140

Outsource process-Anodize per QSI017 4.1.10.1

0.00

140

Outsource4

Memo

139.99

Outsource process - Anodize

Issue P/O to ATG : 34644

1- Black Anodize as per Dwg
Note 4

Certification of Conformity is required

14

DEC 15 2016

DAS
13
9-23

150

Receive & Inspect for Damage & Mat'l Certs

0.00

150

Packaging

Memo

0.05

Packaging

14x Sp/16-12-22

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition																					
								Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐																			

Work Order ID 154282

Wednesday, December 07, 2016 1:50:14 PM

154282

Page 3

Item ID: 644.4113

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Spacer, Stop

Start Date: 12/9/2016 Start Qty: 14.00

14

Cust Item ID:

Required Date: 12/23/2016 Req'd Qty: 14.00

14

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

155

QC5- Inspect part completeness to step on W/O

0.00

155

QC

Memo

0.05

Quality Control

14 (14) 1612.22 DAS
9
9-89

160

0.00

160

SprayPaint

Memo

0.00

Spray Painting

PRIME AS PER DWG AND NOTE 4
BATCH: 136429PAINT AS PER DWG AND NOTE 4
BATCH: 136434

14 17-01-31

165

QC14- Inspect Spray Paint

0.00

165

QC

Memo

0.00

Quality Control

14 DAS
38
9-89
DEC 11 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 154282

Wednesday, December 07, 2016 1:50:14 PM

154282

Page 4

Item ID: 644.4113

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Spacer. Stop

Start Date: 12/9/2016 Start Qty: 14.00

14

Cust Item ID:

Required Date: 12/23/2016 Req'd Qty: 14.00

14

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

Identify as per dwg & Stock Location: CC131

0.00

180

Packaging

Memo

0.02

Packaging

IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV

HDAS
6
9-89

FEB 01 2017

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.23

Quality Control

17/02/02 JAJA

FEB 02 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																																																																	
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																																																																	
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																																																																	
Large Fab ☐	Composite ☐	Supplier ☐																																																																		
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval																																																																
Description Work Order Deviation		Disposition		Completed By																																																																
				Lead hand / Supervisor Approval Verification																																																																
				QC / QA Coordinator Approval																																																																
Root Cause		FAULT CATEGORY																																																																		
<table style="width:100%; border: none;"> <tr><td style="border: none;">Environment ☐</td><td style="border: none;">No Re-verification ☐</td></tr> <tr><td style="border: none;">Design ☐</td><td style="border: none;">Operator ☐</td></tr> <tr><td style="border: none;">Doc/Data ☐</td><td style="border: none;">Offset/Setup ☐</td></tr> <tr><td style="border: none;">Equip/Tooling ☐</td><td style="border: none;">Supplier ☐</td></tr> <tr><td style="border: none;">Handling/Pre ☐</td><td style="border: none;">Training ☐</td></tr> <tr><td style="border: none;">Material ☐</td><td style="border: none;">Use for Testing ☐</td></tr> <tr><td style="border: none;">Internal Transport ☐</td><td style="border: none;">Poor Information ☐</td></tr> <tr><td style="border: none;">Tribal Knowledge ☐</td><td style="border: none;">Rushing ☐</td></tr> <tr><td style="border: none;">LOA ☐</td><td style="border: none;">Product Improvement ☐</td></tr> <tr><td style="border: none;">Substation ☐</td><td style="border: none;">Process Improvement ☐</td></tr> <tr><td style="border: none;">Past Expiry Date ☐</td><td style="border: none;">Manufacturing Process ☐</td></tr> <tr><td style="border: none;">Misidentified ☐</td><td style="border: none;">Past Due ☐</td></tr> </table>	Environment ☐	No Re-verification ☐	Design ☐	Operator ☐	Doc/Data ☐	Offset/Setup ☐	Equip/Tooling ☐	Supplier ☐	Handling/Pre ☐	Training ☐	Material ☐	Use for Testing ☐	Internal Transport ☐	Poor Information ☐	Tribal Knowledge ☐	Rushing ☐	LOA ☐	Product Improvement ☐	Substation ☐	Process Improvement ☐	Past Expiry Date ☐	Manufacturing Process ☐	Misidentified ☐	Past Due ☐	<table style="width:100%; border: none;"> <tr><td style="border: none;">Pressure/Forced ☐</td><td style="border: none;">Temperature/Cure ☐</td></tr> <tr><td style="border: none;">Bending ☐</td><td style="border: none;">Set-up ☐</td></tr> <tr><td style="border: none;">Centre Not Concentric ☐</td><td style="border: none;">BOM/Route ☐</td></tr> <tr><td style="border: none;">Cracks ☐</td><td style="border: none;">Broken/Damage/Defect ☐</td></tr> <tr><td style="border: none;">Crimp/Kink/Ripple/Wave ☐</td><td style="border: none;">Inspection Incomplete/Unqualified ☐</td></tr> <tr><td style="border: none;">Cuffs ☐</td><td style="border: none;">Contamination ☐</td></tr> <tr><td style="border: none;">Crushing ☐</td><td style="border: none;">Countersink ☐</td></tr> <tr><td style="border: none;">Heat Treat ☐</td><td style="border: none;">Cut Too Short ☐</td></tr> <tr><td style="border: none;">Wave/Twist in Tube ☐</td><td style="border: none;">Instructions Incomplete/Unclear ☐</td></tr> <tr><td style="border: none;">Marks/Chatter ☐</td><td style="border: none;">Drill Holes ☐</td></tr> </table>	Pressure/Forced ☐	Temperature/Cure ☐	Bending ☐	Set-up ☐	Centre Not Concentric ☐	BOM/Route ☐	Cracks ☐	Broken/Damage/Defect ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Cuffs ☐	Contamination ☐	Crushing ☐	Countersink ☐	Heat Treat ☐	Cut Too Short ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Marks/Chatter ☐	Drill Holes ☐	<table style="width:100%; border: none;"> <tr><td style="border: none;">Power Loss/Surge ☐</td><td style="border: none;">Positioned Wrong ☐</td></tr> <tr><td style="border: none;">Folio/Program ☐</td><td style="border: none;">Outside Dimensions ☐</td></tr> <tr><td style="border: none;">Grain ☐</td><td style="border: none;">Over/Under tolerance ☐</td></tr> <tr><td style="border: none;">Weld ☐</td><td style="border: none;">Part Incorrect ☐</td></tr> <tr><td style="border: none;">Wrong Stock Pulled ☐</td><td style="border: none;">Part Lost/Missing ☐</td></tr> <tr><td style="border: none;">Out of Sequence ☐</td><td style="border: none;">Part Moved ☐</td></tr> <tr><td style="border: none;">Off-set ☐</td><td style="border: none;">Drawing ☐</td></tr> <tr><td style="border: none;">Mislabeled ☐</td><td style="border: none;">Finish ☐</td></tr> <tr><td style="border: none;">Fit/Function ☐</td><td style="border: none;">Misread ☐</td></tr> <tr><td style="border: none;">Misaligned/off center ☐</td><td style="border: none;">Turning Sequence ☐</td></tr> </table>		Power Loss/Surge ☐	Positioned Wrong ☐	Folio/Program ☐	Outside Dimensions ☐	Grain ☐	Over/Under tolerance ☐	Weld ☐	Part Incorrect ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Out of Sequence ☐	Part Moved ☐	Off-set ☐	Drawing ☐	Mislabeled ☐	Finish ☐	Fit/Function ☐	Misread ☐	Misaligned/off center ☐	Turning Sequence ☐	
Environment ☐	No Re-verification ☐																																																																			
Design ☐	Operator ☐																																																																			
Doc/Data ☐	Offset/Setup ☐																																																																			
Equip/Tooling ☐	Supplier ☐																																																																			
Handling/Pre ☐	Training ☐																																																																			
Material ☐	Use for Testing ☐																																																																			
Internal Transport ☐	Poor Information ☐																																																																			
Tribal Knowledge ☐	Rushing ☐																																																																			
LOA ☐	Product Improvement ☐																																																																			
Substation ☐	Process Improvement ☐																																																																			
Past Expiry Date ☐	Manufacturing Process ☐																																																																			
Misidentified ☐	Past Due ☐																																																																			
Pressure/Forced ☐	Temperature/Cure ☐																																																																			
Bending ☐	Set-up ☐																																																																			
Centre Not Concentric ☐	BOM/Route ☐																																																																			
Cracks ☐	Broken/Damage/Defect ☐																																																																			
Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐																																																																			
Cuffs ☐	Contamination ☐																																																																			
Crushing ☐	Countersink ☐																																																																			
Heat Treat ☐	Cut Too Short ☐																																																																			
Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐																																																																			
Marks/Chatter ☐	Drill Holes ☐																																																																			
Power Loss/Surge ☐	Positioned Wrong ☐																																																																			
Folio/Program ☐	Outside Dimensions ☐																																																																			
Grain ☐	Over/Under tolerance ☐																																																																			
Weld ☐	Part Incorrect ☐																																																																			
Wrong Stock Pulled ☐	Part Lost/Missing ☐																																																																			
Out of Sequence ☐	Part Moved ☐																																																																			
Off-set ☐	Drawing ☐																																																																			
Mislabeled ☐	Finish ☐																																																																			
Fit/Function ☐	Misread ☐																																																																			
Misaligned/off center ☐	Turning Sequence ☐																																																																			
OTHER : _____																																																																				

Picklist Print

Wednesday, December 07, 2016 1:50:18 PM

Page 1

Work Order ID: 154282

154282

Parent Item: 644.4113

644 4113

Parent Item Name: Spacer, Stop

Start Date: 12/9/2016

Required Date: 12/23/2016

Start Qty: 14.00

Required Qty: 14.00

Comments: IPP REV:A NEW ISSUE 16-12-06 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6R0.875		Purchased	No				f	30.7000		3.802105			

M6061T6R0 875

6061-T6 Round Bar .875"

**

16-12-12

DAS
32
9-89

Location

Loc Qty

Loc Code

MAT012

30.7

125552

6.7

M130043

24

0.49

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
☐ Environment	☐ Design	☐ Doc/Data	☐ Equip/Tooling	☐ No Re-verification	☐ Operator	☐ Offset/Setup	☐ Supplier
☐ Handling/Pre	☐ Material	☐ Internal Transport	☐ Tribal Knowledge	☐ Training	☐ Use for Testing	☐ Poor Information	☐ Rushing
☐ LOA	☐ Substation	☐ Past Expiry Date	☐ Misidentified	☐ Pressure/Forced	☐ Bending	☐ Centre Not Concentric	☐ Cracks
				☐ Crimp/Kink/Ripple/Wave	☐ Cuffs	☐ Crushing	☐ Heat Treat
				☐ Wave/Twist in Tube	☐ Marks/Chatter	☐ Temperature/Cure	☐ Set-up
						☐ BOM/Route	☐ Broken/Damage/Defect
						☐ Inspection Incomplete/Unqualified	☐ Contamination
						☐ Countersink	☐ Cut Too Short
						☐ Instructions Incomplete/Unclear	☐ Drill Holes
						☐ Power Loss/Surge	☐ Folio/Program
						☐ Grain	☐ Weld
						☐ Wrong Stock Pulled	☐ Out of Sequence
						☐ Off-set	☐ Mislabeled
						☐ Fit/Function	☐ Misaligned/off center
						☐ Positioned Wrong	☐ Outside Dimensions
						☐ Over/Under tolerance	☐ Part Incorrect
						☐ Part Lost/Missing	☐ Part Moved
						☐ Drawing	☐ Finish
						☐ Misread	☐ Turning Sequence
OTHER : ☐							

APICAL

INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 04489

SHEET 1 OF 1

DWG NO. 644,4100

REV: F

PREPARED BY:

J. BECKER

DATE: 04/08/14

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: PIVOT STEP ASSY

APPROVED BY:

ENGR

MFG

QC

EFF:

NEXT ORDER

TRANSACTION
A-ADD
R-REVISE

CODES (TC)
C-CREATE
D-DELETE

REASON: UPDATE NOTE 4, FINISH SPECIFICATION.

NOTES:

1. IDENTIFY ALL PARTS IN ACCORDANCE WITH MPP-120
2. MATERIAL: 2024-T3 ALUMINUM
3. MATERIAL: 6061-T6 ALUMINUM
4. FINISH IAW MPP-172 SECTION 2.1, SECTION 3.1, SECTION 4.1, SECTION 5.2.
5. MATERIAL: MDS-FILLED NYLON 6/6 SHEET, CUT OD CIRCLE USING 2" GASKET PUNCH, CUT ID HOLE USING 1/4" GASKET PUNCH
6. MATERIAL: MDS-FILLED NYLON 6/6 SHEET, CUT OD CIRCLE USING 2" GASKET PUNCH, CUT ID HOLE USING 5/16" GASKET PUNCH
7. DIMENSION VALUE HAS FINISH COATING OF 6-10 MIL (.006-.010) TAKEN INTO CONSIDERATION
8. ADD ADDITIONAL WASHER UNDERNEATH CASTLE NUTS IF NECESSARY.
9. FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III CLASS 2, COLOR BLACK.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 154282MCS
16-12-07

SHEET 1, NOTES IS:

DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOM

CHANGE CATEGORY
☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED
☐ YES ☒ NO

APICAL

INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO.

04286

SHEET 1 OF 1

DWG NO. 644.4100

REV: F

PREPARED BY J. SOTO

DATE: 12/04/2013

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: PIVOT STEP ASSY

APPROVED BY:

ENGR

[Signature]

MFG

[Signature]

QC

[Signature]

EFF.

NEXT ORDER

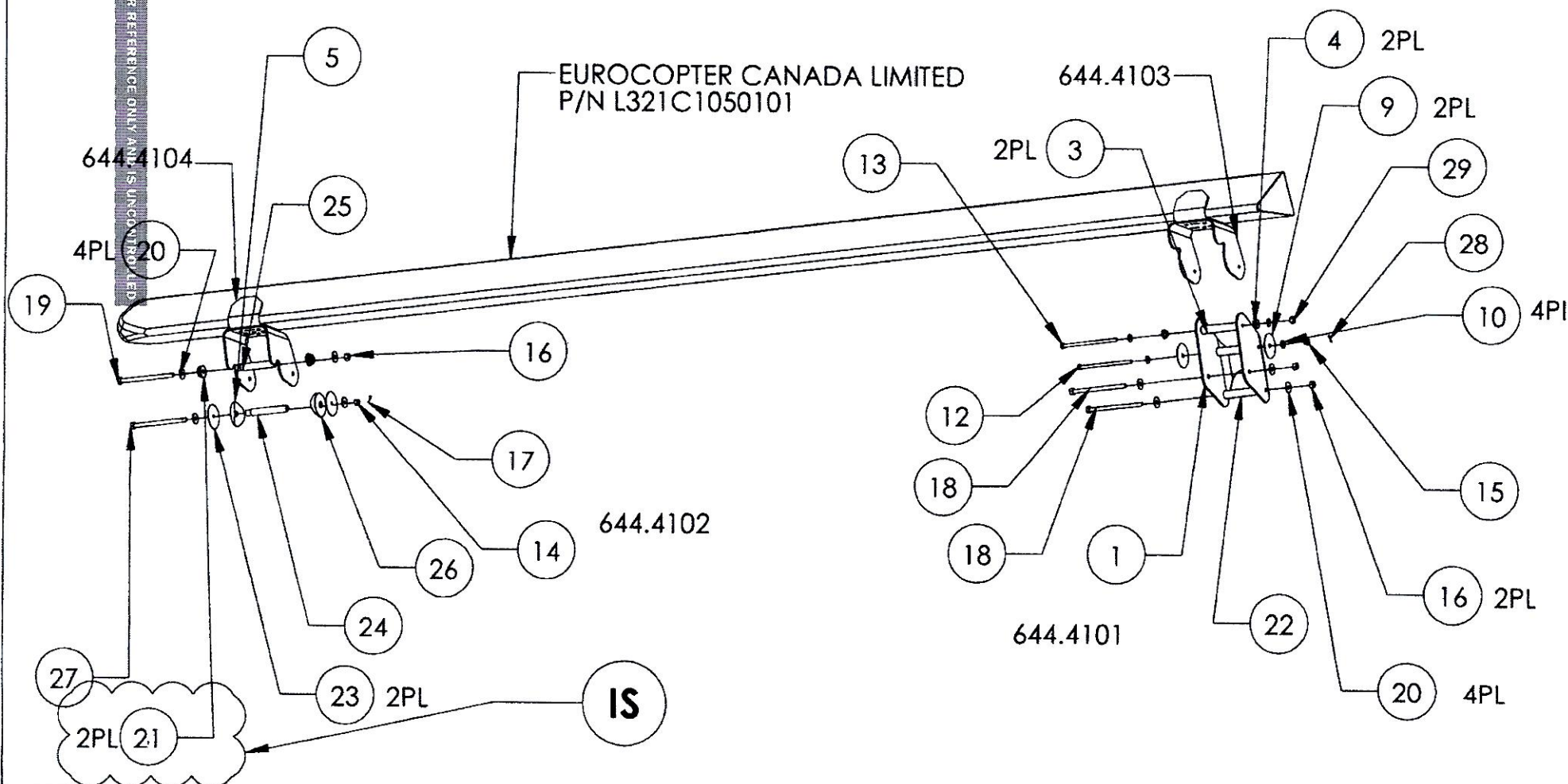
TRANSACTION CODES (TC):
A-ADD
R-REVISE
C-CREATE
D-DELETE

REASON: REVISED F/N CALL OUT FROM 22 TO 21

ECR:

13-151

SHEET 1, ZONE D1 IS:



DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

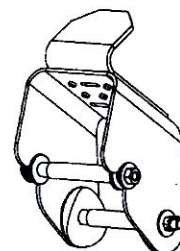
DER REVIEW REQUIRED

☐ YES ☒ NO

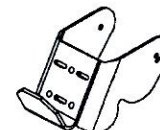
NOTES:

-

644.4101



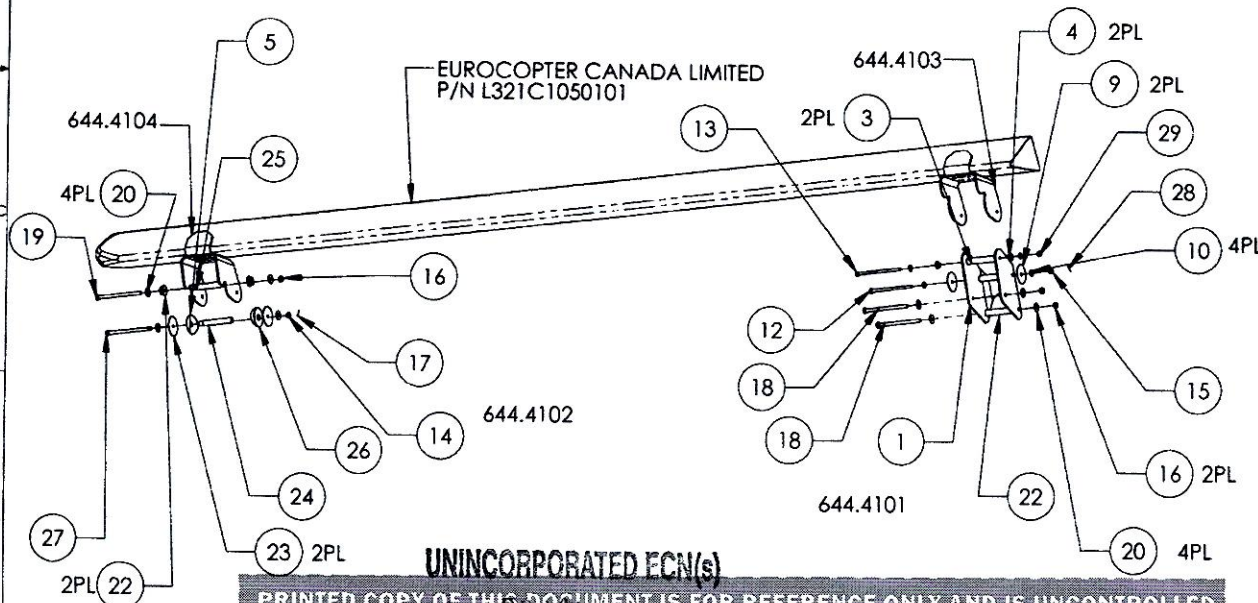
644.4102



644.4103



644.4104



UNINCORPORATED ECN/S

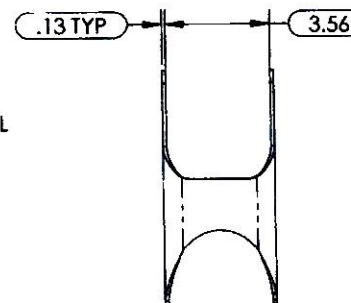
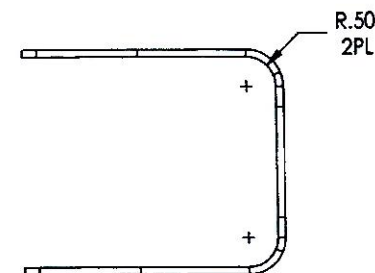
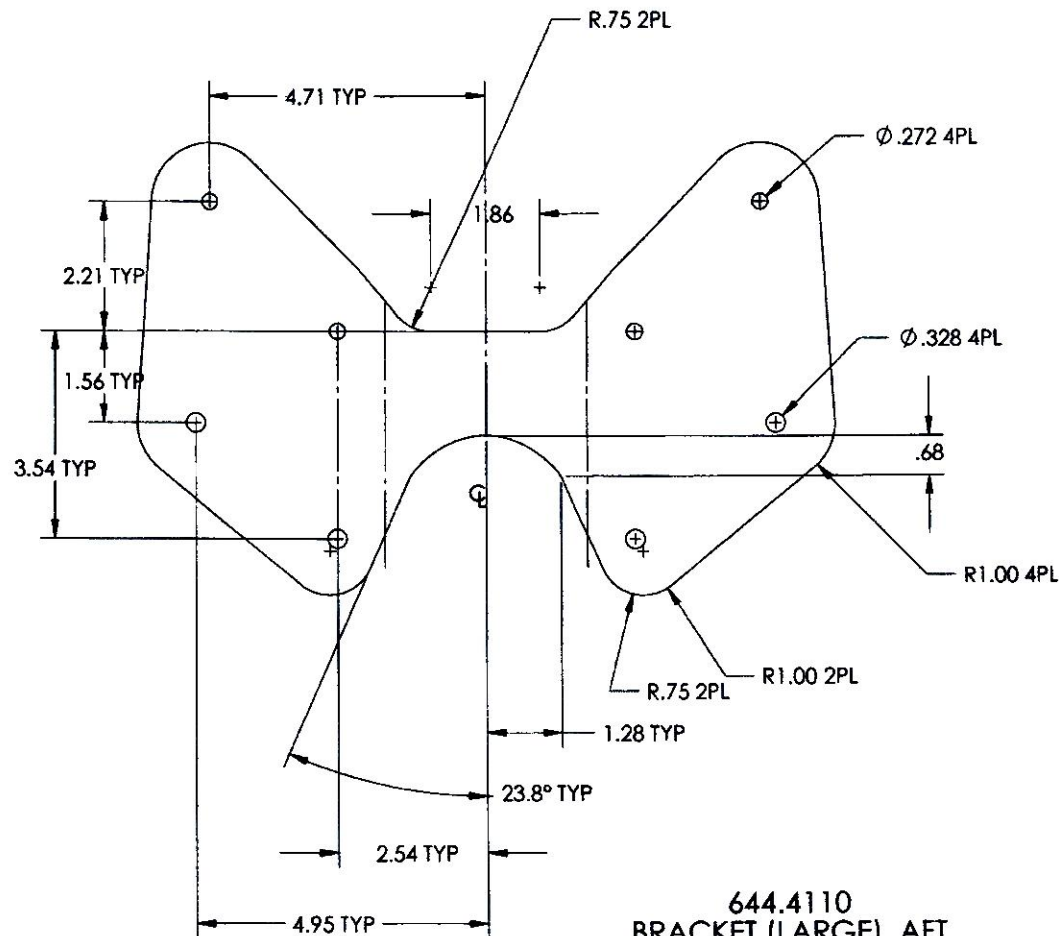
PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

REVISED			
REV.	DESCRIPTION	DATE	APPROVED
A	INCORPORATED ECH 01310 01322 01332 & 01357	11-22-05	S. JOSEPH
B	INCORPORATED ECH 01312 01418 01795 & 01828	05-21-07	P. BRAVO
C	INCORPORATED ECH 01908 02526 03022	12-16-10	P. BRAVO
D	INCORPORATED ECH 03111 03113 03208 & 03740	12-10-12	P. BRAVO
E	INCORPORATED ECH 03941	06-19-13	P. BRAVO
F	INCORPORATED ECH 04006	7-29-13	P. BRAVO

		1	29	601.3273	LOCKNUT FULL	MS21044N4	
		1	28	601.2640	COTTER PIN	MS24665-132	
		1	27	601.2328	BOLT, HEX	ANS-45	
		1	26	644.4124	WASHER, PIVOT	△△△	
		1	25	644.4123	FWD CROSS-TUBE BUSHING	△△△	
		1	24	644.4122	FWD CROSS-TUBE BUSHING	△△△	
		2	23	644.4121	WASHER, NYLON	△△△	
		1	22	644.4120	SPACER, CROSS-TUBE	△△△	
		2	21	644.4119	SPACER, FWD STOP	△△△	
		4	20	601.2110	WASHER, FLAT THICK	MSA14PC 0063K	
		1	19	601.2250	BOLT, HEX	ANS-50	
		2	18	601.2249	BOLT, HEX	ANS-43A	
		1	17	601.3315	COTTER PIN	MS24665-210	
		1	2	16	601.3272	LOCKNUT FULL	MS21044N5
		1	15	601.1435	NUT, HEX CASTLE FULL	AN310-4	
		1	14	601.3270	NUT, HEX CASTLE FULL	AN310-5	
		1	13	601.3407	BOLT, HEX	AN4-47A	
		1	12	601.2434	BOLT, HEX	AN4-45	
6	3		11	601.2326	RIVET, COUNTERSUNK	MS20426AD5-B	
		4	10	601.0863	WASHER, THICK	MSA114PC 0463K	
		2	9	644.4118	WASHER, NYLON	△△△	
			8	644.4117	BRACKET, FWD PIVOT	△△△	
			7	644.4116	BRACKET [SMALL], FWD	△△△	
			6	644.4115	BRACKET [SMALL], AFT	△△△	
		1	5	644.4114	WASHER, PIVOT	△△△	
		2	4	644.4113	SPACER, STOP	△△△	
		2	3	644.4112	SPACER	△△△	
		1	2	644.4111	BRACKET, AFT PIVOT	△△△	
		1	1	644.4110	BRACKET [LARGE], AFT	△△△	
×		1		644.4104	FWD BRACKET ASSY		
		1		644.4103	AFT BRACKET ASSY		
				644.4102	PIVOT STEP ASSY		
				644.4101	PIVOT STEP ASSY		
410441034104101	FIND #			PART #	DESCRIPTION	MAT'L	SPEC

QTY	ORIGINAL DATE 05-01-05	05-01-05	PARTS LIST		DATE	SPEC.
NEXT ASSY [S]	DRAWN BY D. PARROTT	CHECKED J. LUGER	APICAL INDUSTRIES			
644.1800	DRAWING APPROVAL J. LUGER 08-29-05		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300			
CONTRACT NO.			PIVOT STEP ASSY			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS = ±.03 3 PLACE DECIMALS = ±.010 ANGLES = .5°			REV B	CAGE CODE 079M6	DWG NO 644.4.100	REV F
			SCALE = NONE		SHEET 1 OF 14	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

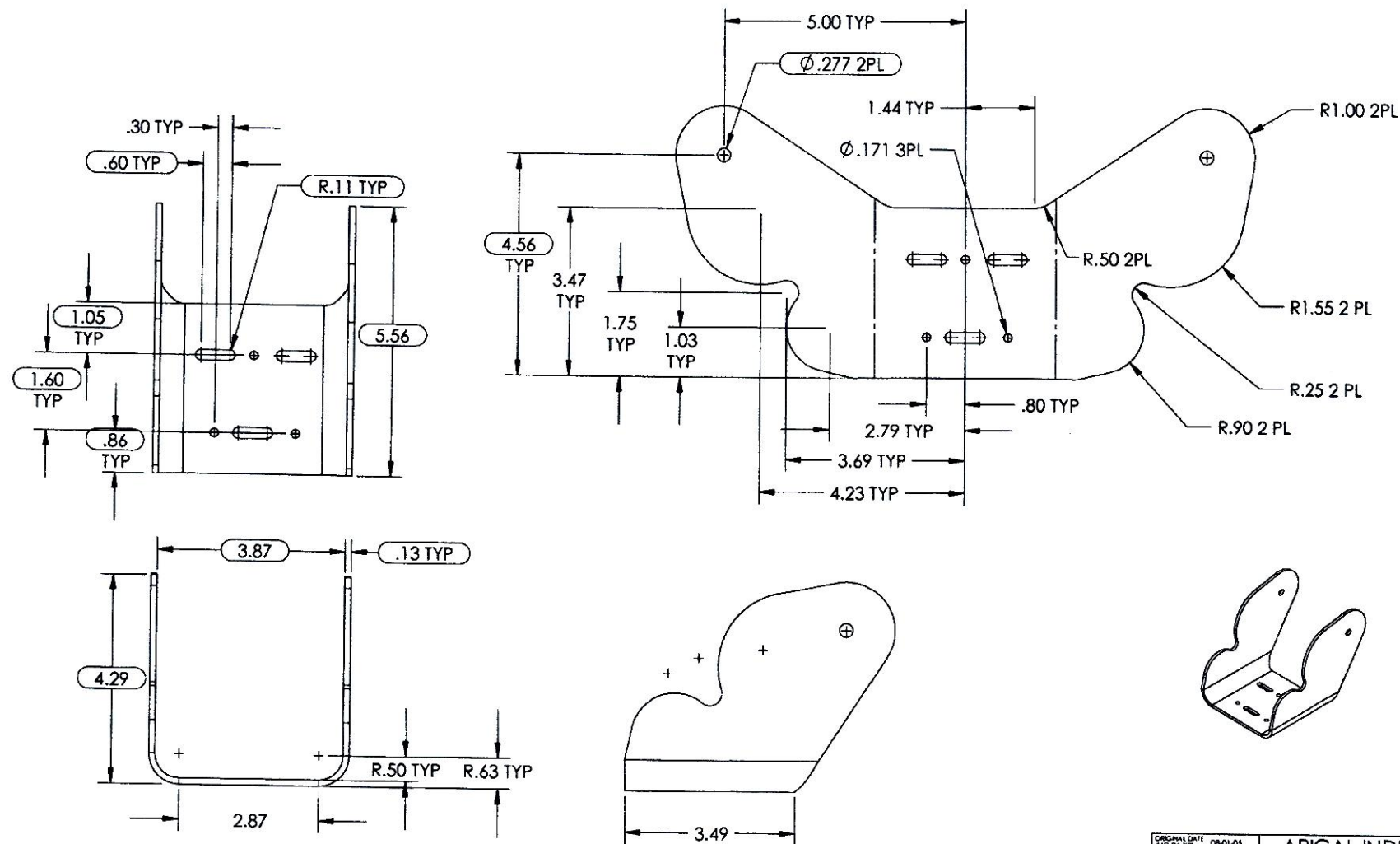


644.4110
BRACKET (LARGE), AFT

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE 08-01-05	APICAL INDUSTRIES
DRAWN BY SJOSEPH	2608 TEMPLE HEIGHTS DR.
CHECKED BY SJOSEPH	OCEANSIDE, CA. 92056-3512 (760)724-5300
DRAWING APPROVAL SJOSEPH 08-29-05	PIVOT STEP ASSY
CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS $\pm .01$ 3 PLACE DECIMALS $\pm .001$ ANGLES $\pm .5^\circ$	SHEET 2 OF 16
SCALE: NONE	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

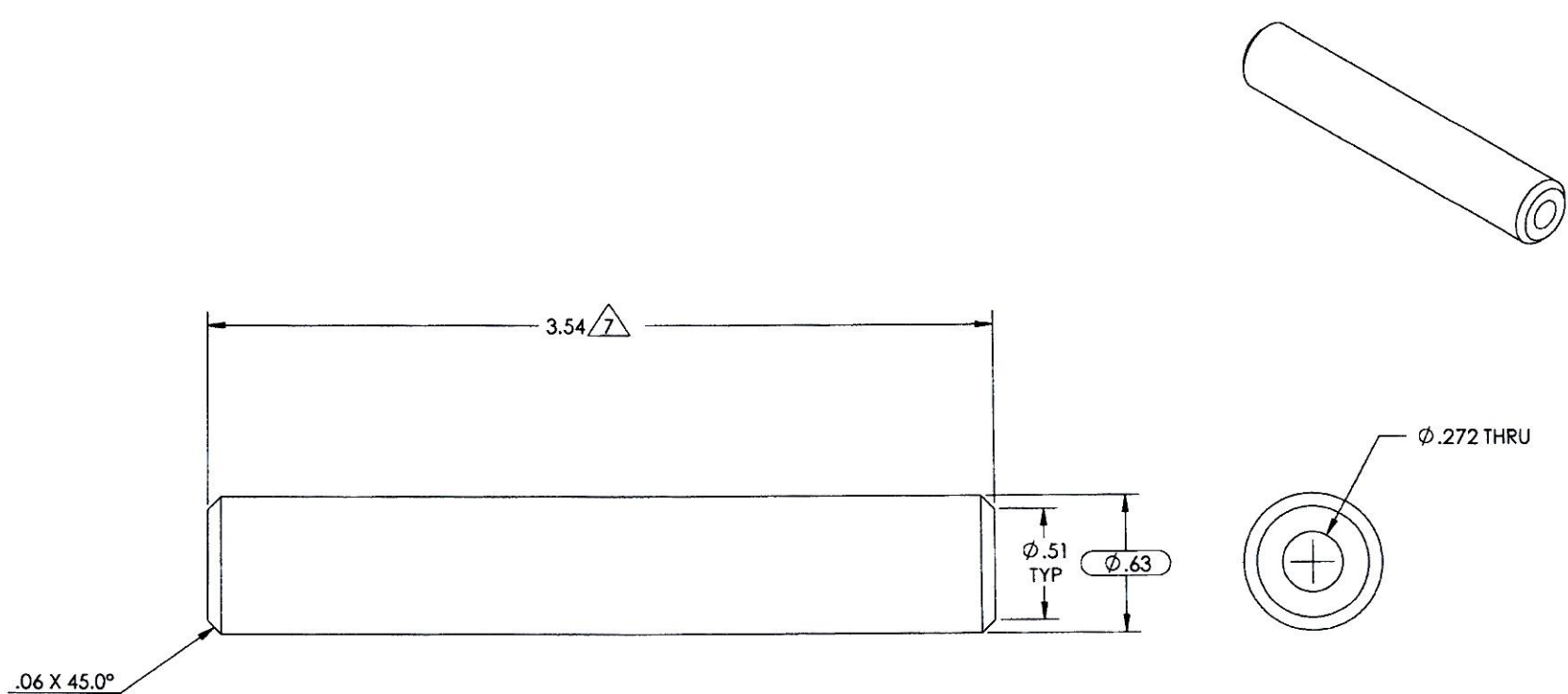


PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

644.4111
BRACKET, AFT PIVOT

ORIGINAL DATE 08-01-05	APICAL INDUSTRIES
DRAWN BY D. HARRIS	2608 TEMPLE HEIGHTS DR.
CHECKED BY S. JOSEPH	OCEANSIDE, CA. 92056-3512 (760)724-5300
DATE 08-29-05	PIVOT STEP ASSY
CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ±.5°	REV F
SCALE NONE	SHEET 3 OF 14

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

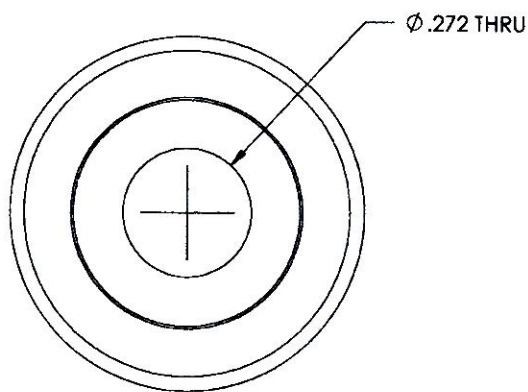
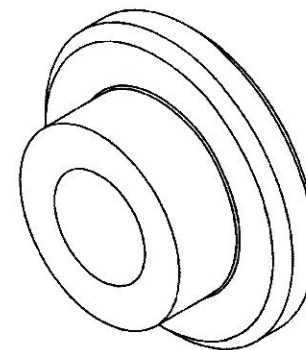
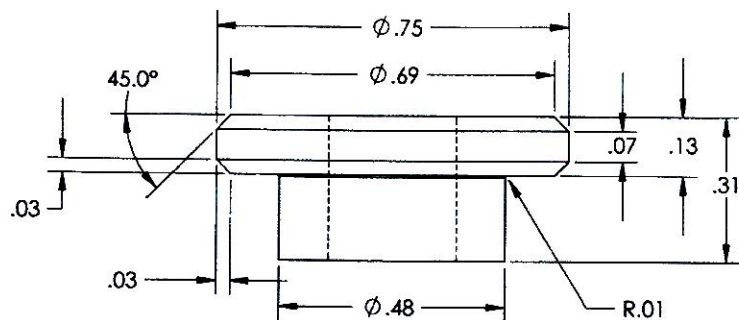


644.4112
SPACER

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE 06-01-05		APICAL INDUSTRIES	
DRAWN BY D. PARSONS		2608 TEMPLE HEIGHTS DR.	
CHECKED BY S. JOSEPH		OCEANSIDE, CA 92056-3512 (760)724-5300	
DRAWING APPROVAL S. JOSEPH 06-29-05		PIVOT STEP ASSY	
CONTRACT NO.		REV. F	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ±.5°		SRT CAGE CODE B 07M26	DWG. NO. 644.4100
SCALE NONE		SHEET 4 OF 16	

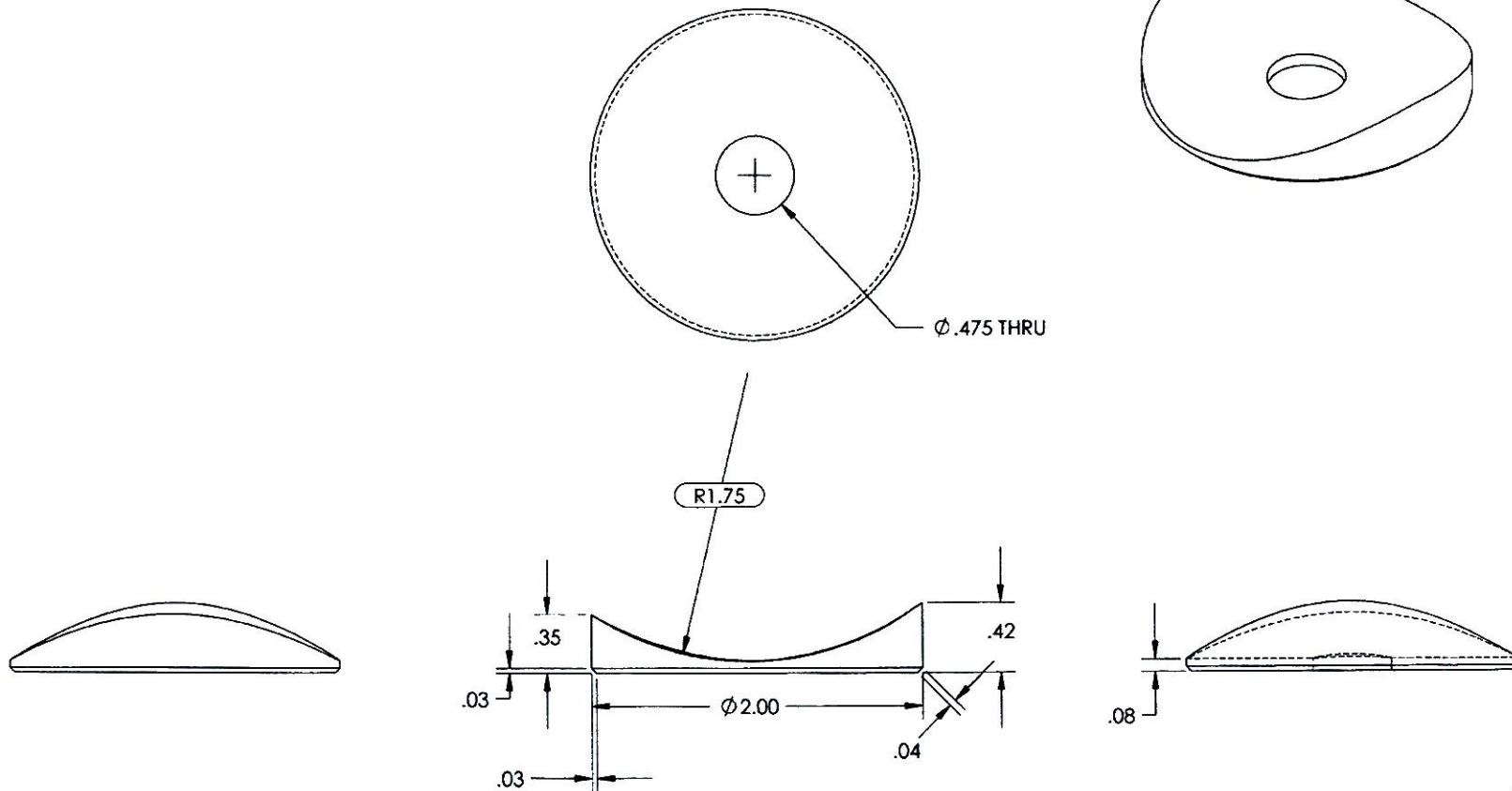
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE 08-01-05	APICAL INDUSTRIES		
DRAWN BY D. PARROTT	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300		
DRAWING APPROVAL S. JOSEPH	PIVOT STEP ASSY		
CONTRACT NO.	REV B	QAGS CORR D7M26	REV F
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS .003 3 PLACE DECIMALS .000 ANGLES $\pm .5^\circ$	SCALE NONE	DWG. NO. 644.4100	SHEET 5 OF 16

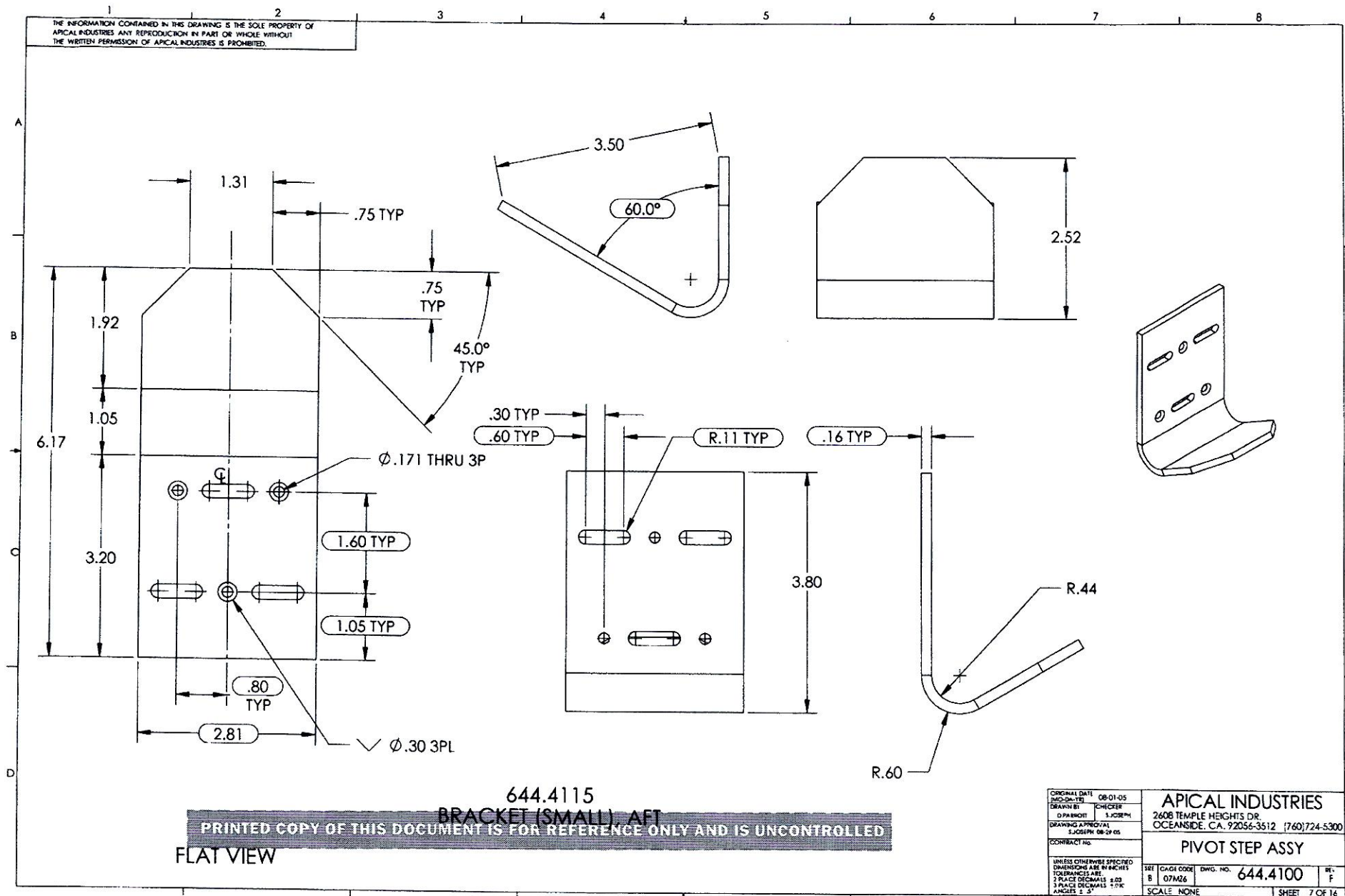
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



644.4114
PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY IS UNCONTROLLED

ORIGINAL DATE 08-01-05	APICAL INDUSTRIES	
DRAWN BY D. PARROTT	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY S. JOSEPH	PIVOT STEP ASSY	
DRAWING APPROVAL S. JOSEPH 08-27-05	SIZE B	ENG. NO. 644.4100
CONTRACT NO.	SCALE NONE	SHEET 4 OF 16

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



ORIGINAL DATE 08-01-05		APICAL INDUSTRIES	
DRAWN BY CHICKER	DRAWN BY S. JOSEPH	2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL S. JOSEPH 08-29-05		OCEANSIDE, CA. 92056-3512 (760)724-5300	
CONTRACT NO.		PIVOT STEP ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.01 ANGLES ±.5°	SHEET B	CAGE CODE 07M26	DWG. NO. 644.4100
		SCALE NONE	SHEET 7 OF 16

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

644.4116
BRACKET (SMALL) FWD

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE: 08-01-05
DRAWN BY: J. JOSEPH
CHECKED BY: J. JOSEPH
DRAWING APPROVAL: J. JOSEPH 08-29-05
CONTRACT NO.:
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.03
3 PLACE DECIMALS ±.010
ANGLES ±.5°

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5122

PIVOT STEP ASSY

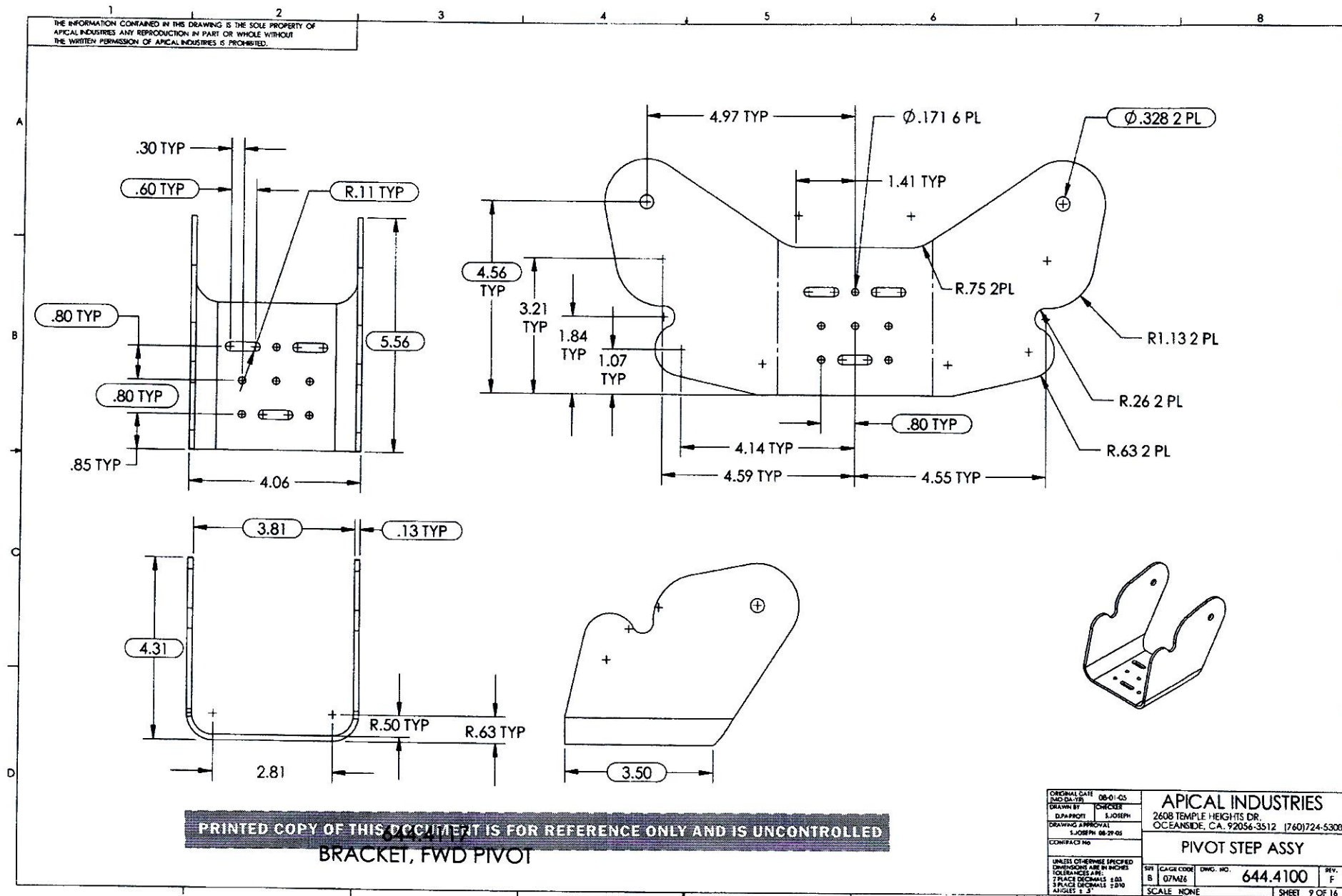
SHEET 8 OF 8

BRACKET (SMALL), FWD

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE (M/D/YR)	08-01-03	APICAL INDUSTRIES 2608 HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300			
DRAWN BY J. PARROTT	J. JOSEPH				
DRAWING APPROVAL J. JOSEPH 06-29-03					
CONTRACT NO.		PIVOT STEP ASSY			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES 1. ALL DIMENSIONS TO CENTER UNLESS NOTED 2. PLACE DECIMALS 1.00 3. PLACE DECIMALS 2.00 4. ANGLES 2.5°					
		SIZE 8	CAGE CODE 07M26	DWG. NO. 644.4100	REV. 16
		SCALE NONE		SHEET 8 OF 16	

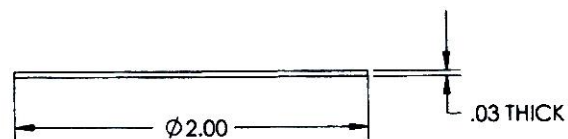
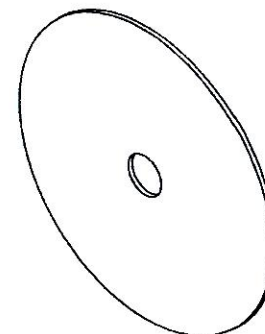
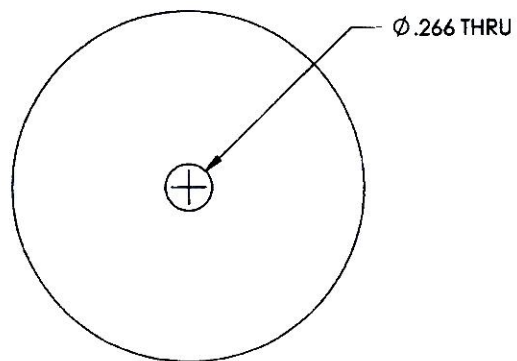
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



ORIGINAL DATE	08-01-05	APICAL INDUSTRIES	
DRAWN BY	CHUCKER	2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL	1 JOSEPH	OCEANSIDE, CA. 92056-3512 (760)724-5309	
CONTRACT NO.		PIVOT STEP ASSY	
UNLESS OTHERWISE SPECIFIED		SHEET	9 OF 16
DIMENSIONS ARE IN INCHES		CAGE CODE	DWG. NO.
TOLERANCES ARE:		B	07M26
2 PLACE DECIMALS ±.03		644.4100	REV. F
3 PLACE DECIMALS ±.010		SCALE	NONE
ANGLES ±.3°			

1 2 3 4 5 6 7 8
A
B
C
D

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

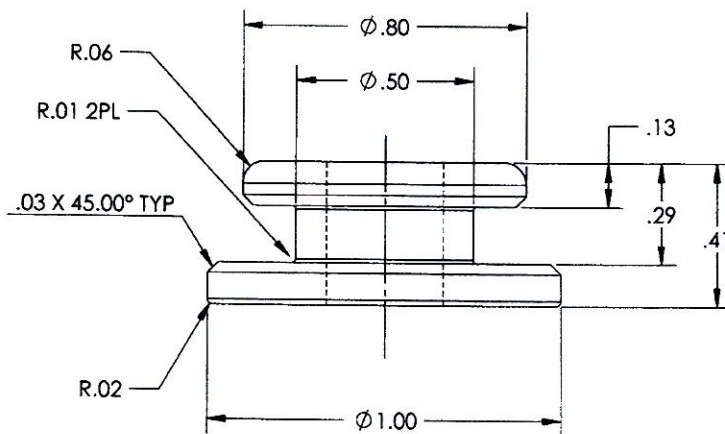
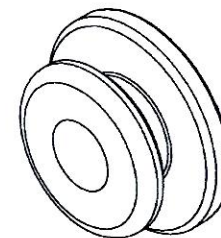
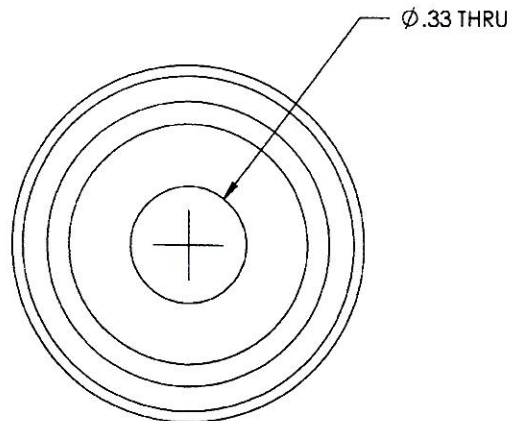


644.4118
WASHER, NYLON

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

DATE	08-01-05	APICAL INDUSTRIES	
DRAWN BY	CHICKER	2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL	S.JOSEPH	OCEANSIDE, CA. 92056-3512 (760)724-5300	
CONTRACT NO.		PIVOT STEP ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ±.5°	SER B	CAGE CODE 07M26	REV F
		DWG. NO. 644.4100	
		SCALE NONE	SHEET 10 OF 16

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

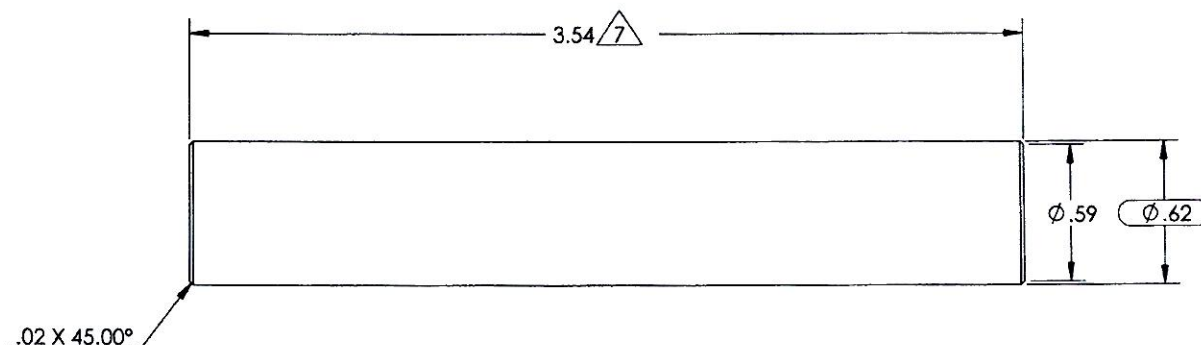
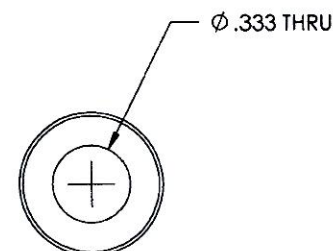
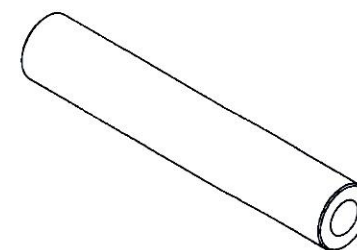


644.4119
SPACER, FWD STOP

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE 08-01-05		APICAL INDUSTRIES	
DRAWN BY J. JOSEPH		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL J. JOSEPH 08-29-05		PIVOT STEP ASSY	
CONTRACT NO.		REV. F	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1. PLACE DECIMALS ±.03 2. PLACE DECIMALS ±.010 ANGLES ±.5°		SCALE NONE	SHEET 11 OF 16

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

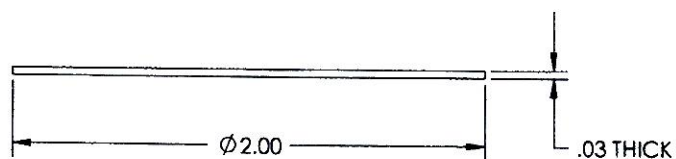
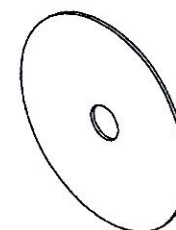
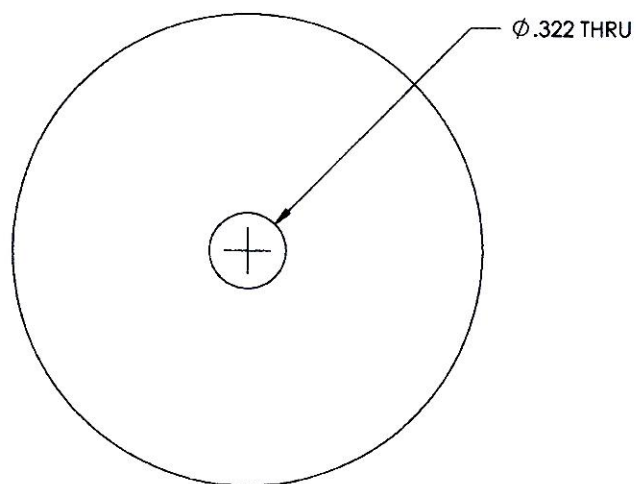


644.4120
SPACER, CROSS-TUBE

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE: 08-01-05		APICAL INDUSTRIES	
DRAWN BY: D. PARBOTTI		2608 TEMPLE HEIGHTS DR.	
CHECKER: S. JOSEPH		OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVAL: S. JOSEPH 08-29-05		PIVOT STEP ASSY	
CONTRACT NO.		MT: B	QWG NO: 644.4100
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .010 ANGLES ± .5°		SCALE: NONE	SHEET: 12 OF 16

1 2 3 4 5 6 7 8
A
B
C
D
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



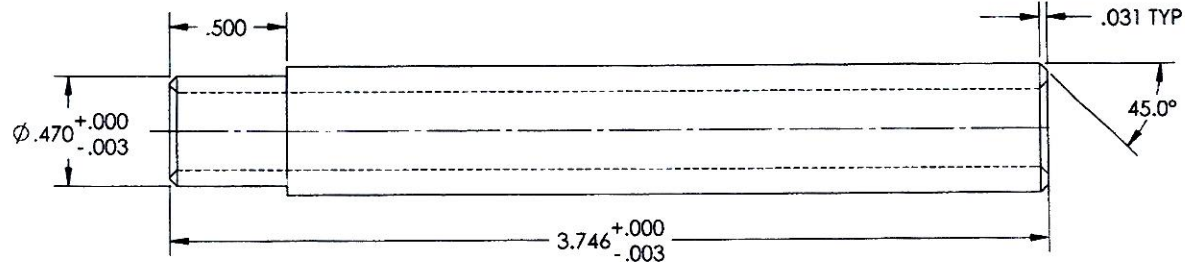
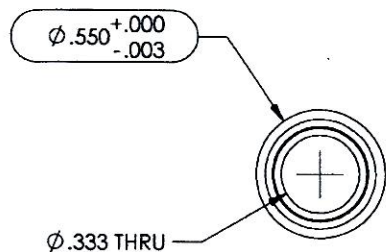
644.4121

WASHER, NYLON

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE 08-01-05	APICAL INDUSTRIES	
DRAWN BY D. J. JOSEPH	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
CHECKED S. JOSEPH	PIVOT STEP ASSY	
DRAWING APPROVAL S. JOSEPH 08-29-05	SCALE NONE	
CONTRACT NO.	SHEET 13 OF 16	REV. F
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ±.5°		

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

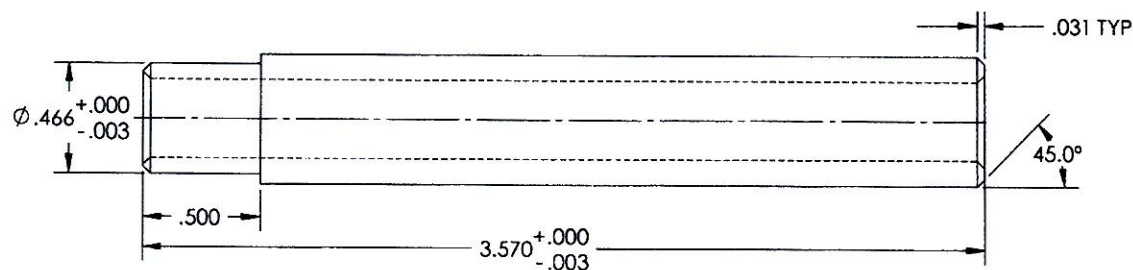
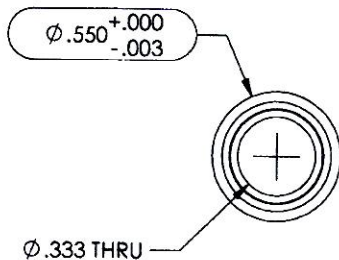


644.4122

PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE 08-01-05		APICAL INDUSTRIES	
DRAWN BY J. JARRICH		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY J. JOSEPH		PIVOT STEP ASSY	
DRAWING APPROVAL J. JOSEPH 08-24-05		CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ±.5°		SHEET B	DWG. NO. 644.4100
SCALE: NONE		REV. 1	
		SHEET 14 OF 16	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

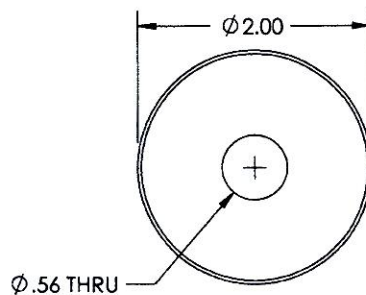
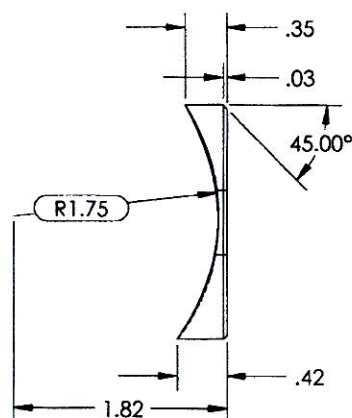


644.4123

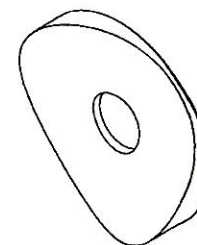
PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE 08-01-05		APICAL INDUSTRIES	
DRAWN BY D. PAIRICOTT		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL S. JOSEPH 08-29-05		PIVOT STEP ASSY	
CONTRACT NO.		SHEET 15 OF 16	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SERIAL B	CAGE CODE 07M26
		DWG. NO. 644.4100	REV. F
		SCALE NONE	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



644.4124



PRINTED COPY OF THIS DOCUMENT IS FOR REFERENCE ONLY AND IS UNCONTROLLED

ORIGINAL DATE 08-01-05	APICAL INDUSTRIES		
DRAWN BY STANBORN	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300		
CHECKED BY T. JOSEPH	PIVOT STEP ASSY		
DRAWING APPROVAL DATE: 08-29-05			
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.02 3 PLACE DECIMALS ±.010 ANGLES ±.5°	SIZE / CAGE CODE B 07M26	DWG. NO. 644.4100	REV. 1
SCALE: NONE		SHEET 16 OF 16	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO34644

Purchase Order Date 12/15/2016

PO Print Date 12/21/2016

Page Number 5 of 7

Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

613-446-4544

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

12	154272	644.4120 SPACER REV. F2	12/22/2016	7.00	\$4.95	\$34.65
----	--------	----------------------------	------------	------	--------	---------

Yes

12/22/2016

FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE 3 CLASS 2, COLOR BLACK

Line Total:

\$34.65

13	154284	644.4119 SPACER REV. F2	12/22/2016	14.00	\$3.30	\$46.20
----	--------	----------------------------	------------	-------	--------	---------

Yes

12/22/2016

FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE 3 CLASS 2, COLOR BLACK

Line Total:

\$46.20

14	154282	644.4113 SPACER REV. F2	12/22/2016	14.00	\$3.00	\$42.00
----	--------	----------------------------	------------	-------	--------	---------

DAS
9
9-89

Yes

12/22/2016

FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE 3 CLASS 2, COLOR BLACK

Line Total:

\$42.00

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

12/21/2016



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 912727

Date: 20-Dec-16

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	PLEASE REFERENCE THE PACK LIST NUMBER ON ALL CORRESPONDENCE TO THIS SHIPMENT. IF YOU HAVE ANY QUESTIONS, PLEASE CALL AT (613) 446-4544.		
7 ea	Part: 644.4122 Bushing Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Job: 20512	Rev: F2 PO: PO34644	Line: 11
7 ea	Part: 644.4120 Spacer Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Job: 20513	Rev: F2 PO: PO34644	Line: 12
14 ea	Part: 644.4119 Spacer Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Job: 20514	Rev: F2 PO: PO34644	Line: 13
14 ea	Part: 644.4113 Spacer Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Job: 20515	Rev: F2 PO: PO34644	Line: 14
14 ea	Part: 644.4112 Spacer Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Job: 20516	Rev: F2 PO: PO34644	Line: 15
50 ea	Part: D1038-58B Rail Black Anodize per MIL-A-8625F, Type II, Class 2 Job: 20517	Rev: B PO: PO34644	Line: 16
2	Part: D5046-041	Rev: B	



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 912727

Date: 20-Dec-16

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
ea	Co-pilot Black Anodize per MIL-A-8625F, Type II, Class 2 Job: 20518 PO: PO34644 Line: 17		
DATE: 20/12/16			
CERTIFIED SIGNATURE: [Signature]			
RECEIVER SIGNATURE: [Signature]			
Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			
CERTIFICATE OF CONFORMANCE			
A.T.G. INDUSTRIES INC. CERTIFIES THAT ALL ITEMS IN THIS SHIPMENT CONFORM TO REQUIREMENTS.			
MADE IN CANADA.			